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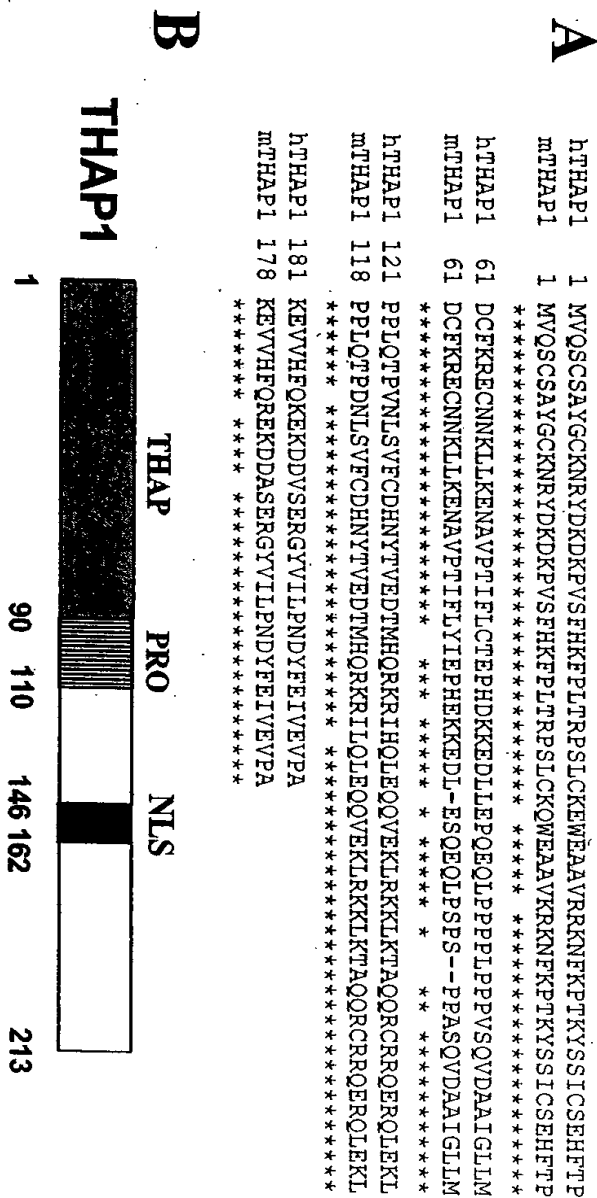
THAP PROTEINS AS NUCLEAR RECEPTORS FOR CHEMOKINES
AND ROLES IN TRANSCRIPTIONAL REGULATION, CELL
PROLIFERATION AND CELL DIFFERENTIATION

Girard et al.

Appl. No.: Unknown

Atty Docket: BIOBANK.012A

FIGURE 1



**THAP PROTEINS AS NUCLEAR RECEPTORS FOR CHEMOKINES
AND ROLES IN TRANSCRIPTIONAL REGULATION, CELL
PROLIFERATION AND CELL DIFFERENTIATION**

Girard et al.

Appl. No.: Unknown

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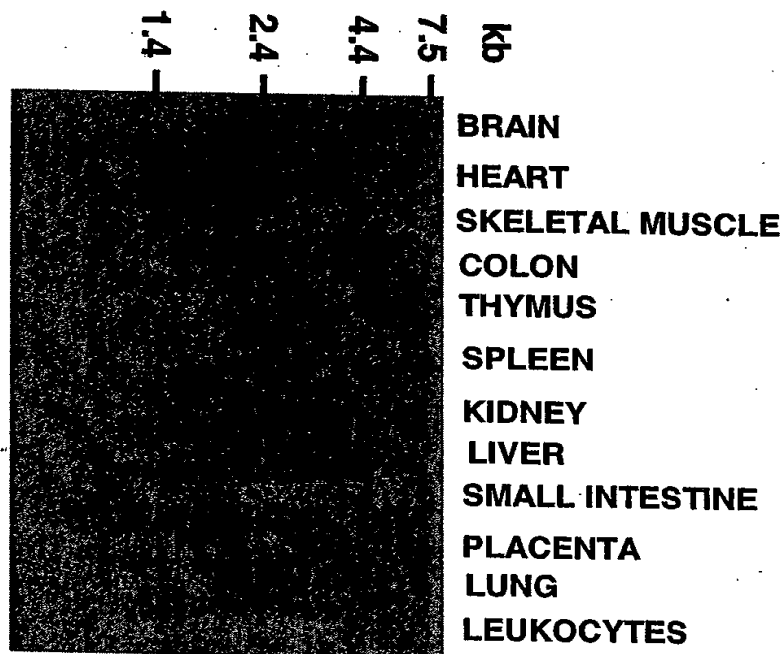


FIGURE 2

THAP PROTEINS AS NUCLEAR RECEPTORS FOR CHEMOKINES
AND ROLES IN TRANSCRIPTIONAL REGULATION, CELL
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Figure 3

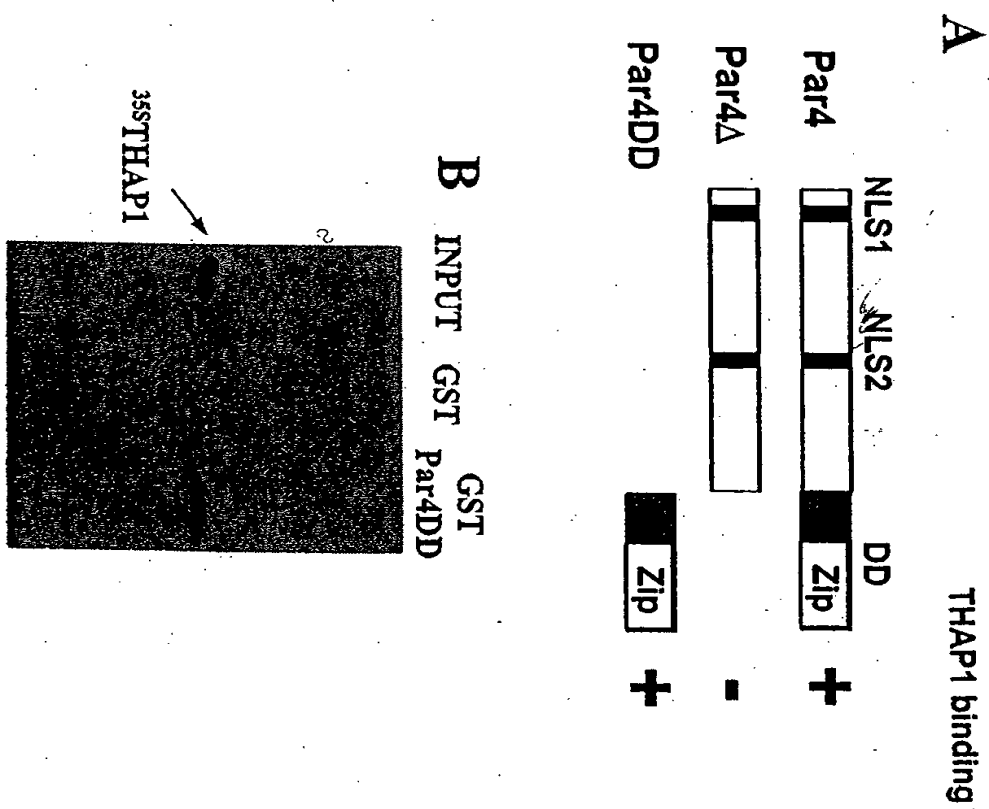
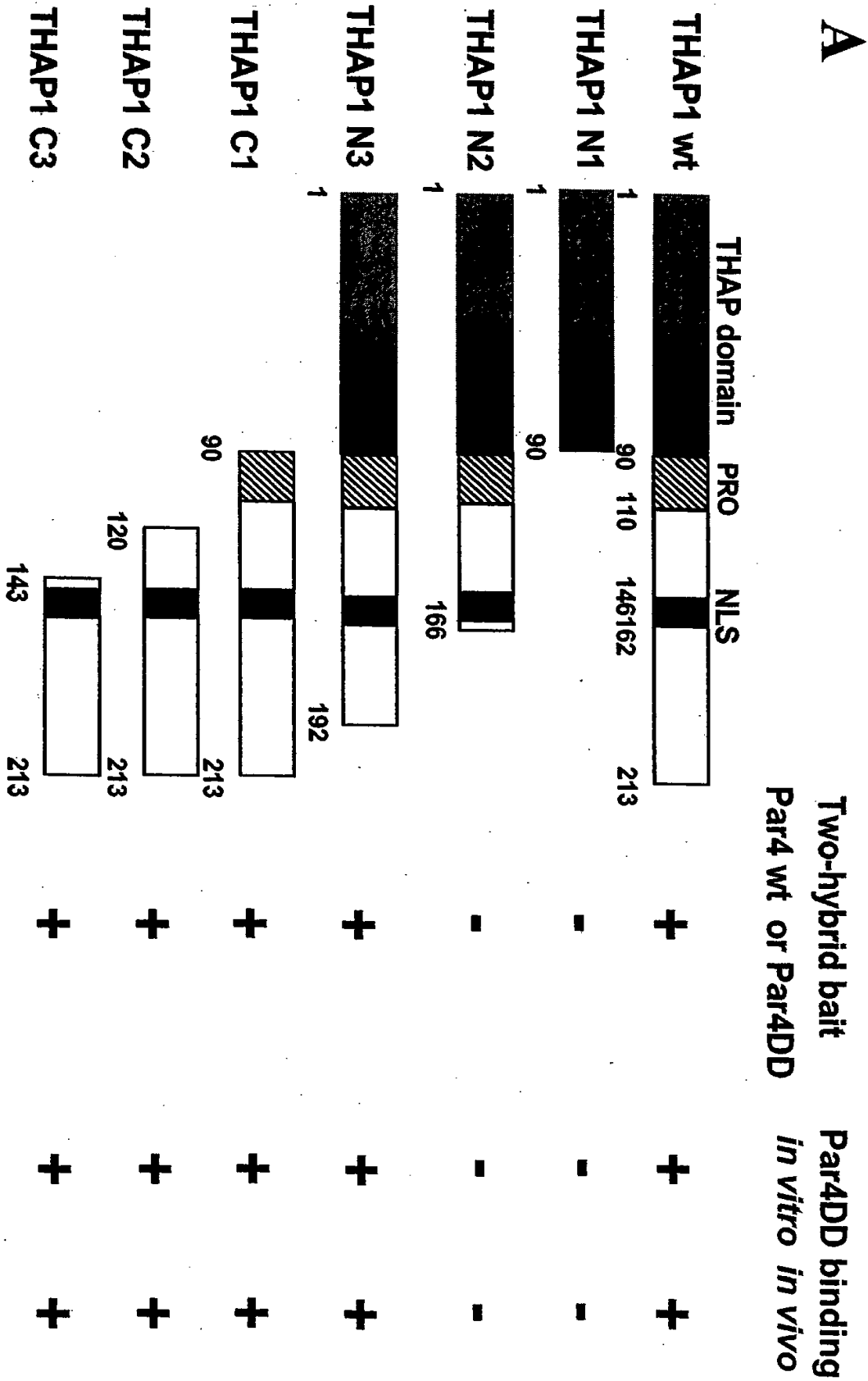


FIGURE 4A



THAP PROTEINS AS NUCLEAR RECEPTORS FOR CHEMOKINES
AND ROLES IN TRANSCRIPTIONAL REGULATION, CELL
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Figure 4b

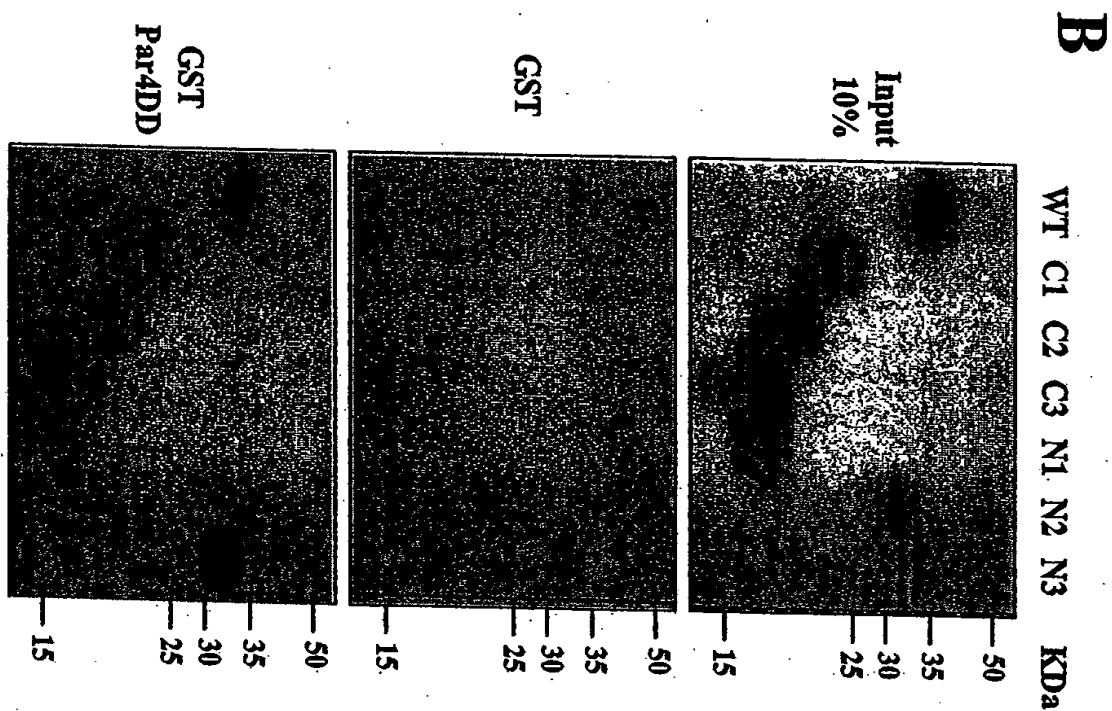


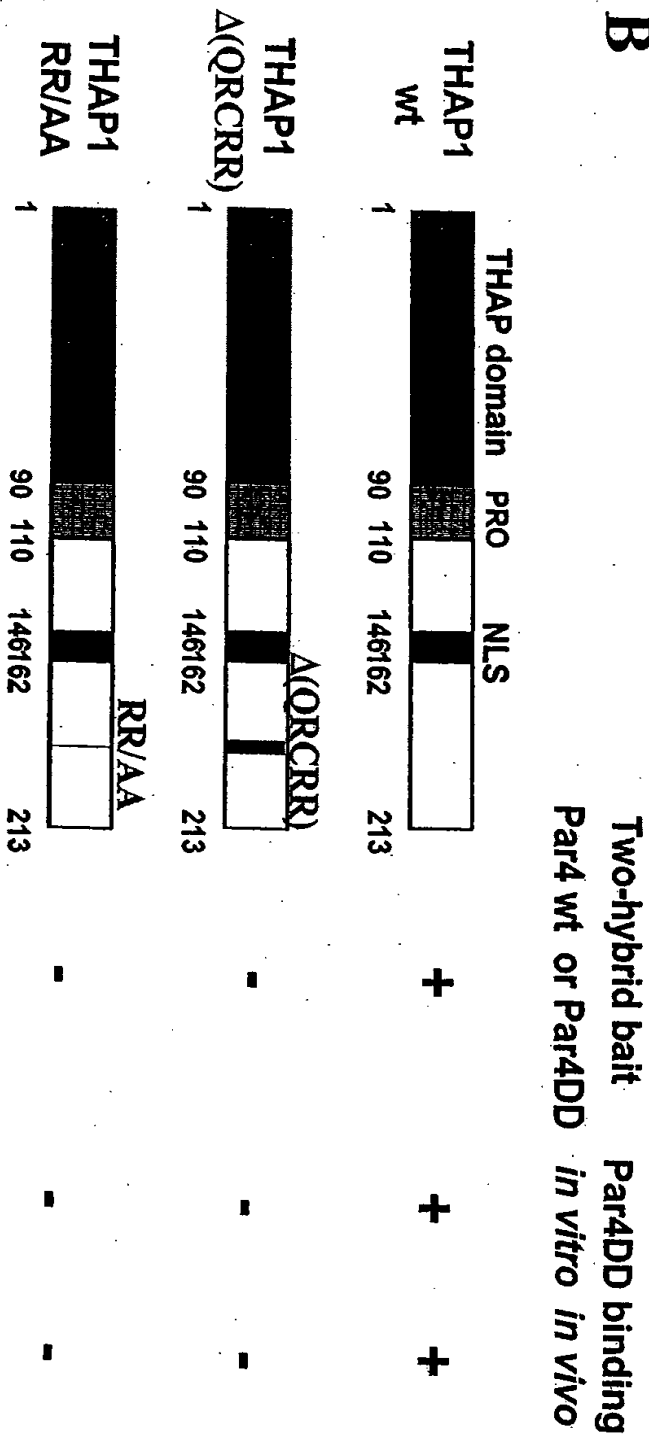
Figure 5

A

mZIP -VLEDVAAAEQGLREL--QRGRQCCREVCALRAAAEQREARCRDG
 mTHAP-1 -QLEQQVEKLRKKLKTAAQQRCRQERQLEKLEKVVHFEQREKDDASE
 hTHAP-1 -QLEQQVEKLRKKLKTAAQQRCRQERQLEKLEKVVHFEQREKDDVSE

Consensus Par4 binding site: LE (X₁₂₋₁₄) QRXRRQXR (X₁) QXE

B



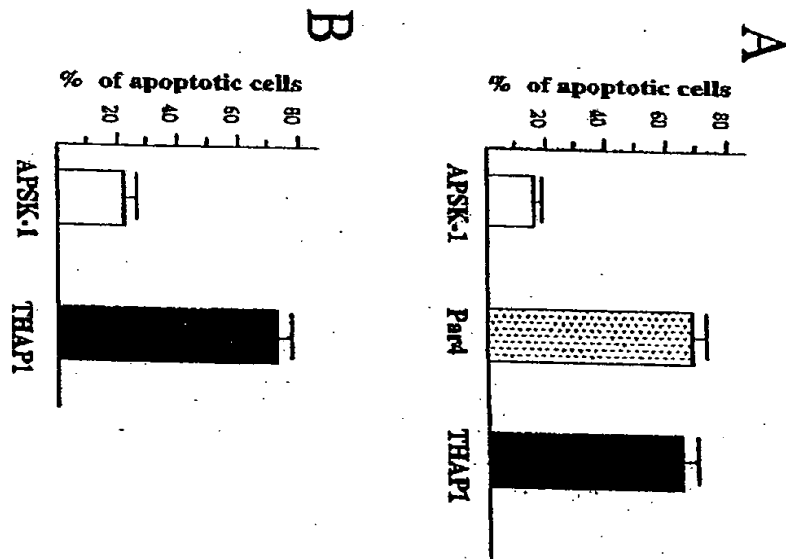
THAP PROTEINS AS NUCLEAR RECEPTORS FOR CHEMOKINES
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Figure 6



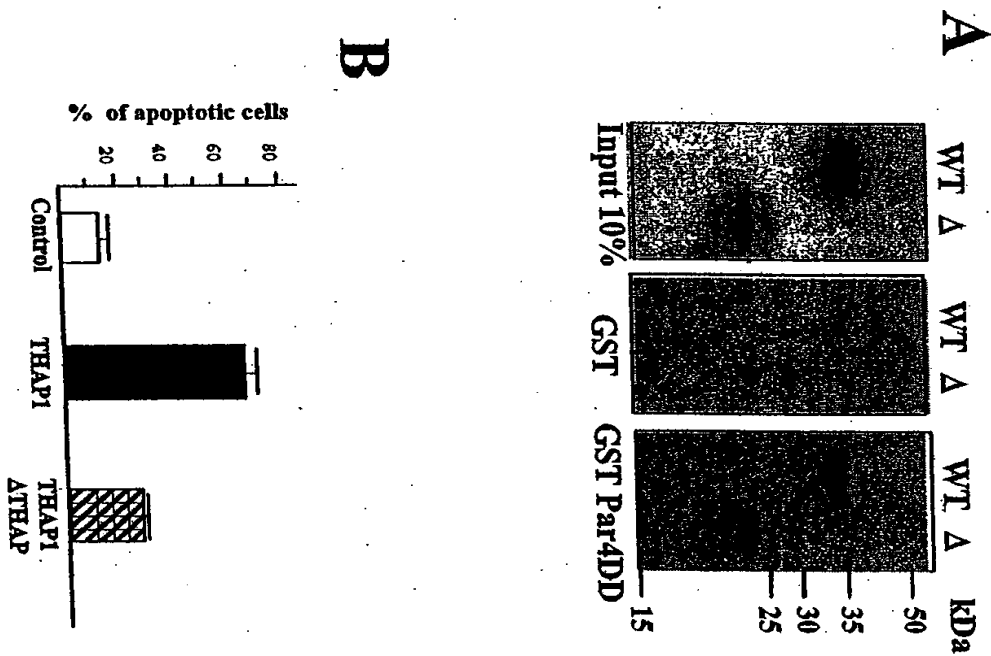
THAP PROTEINS AS NUCLEAR RECEPTORS FOR CHEMOKINES
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Figure 7



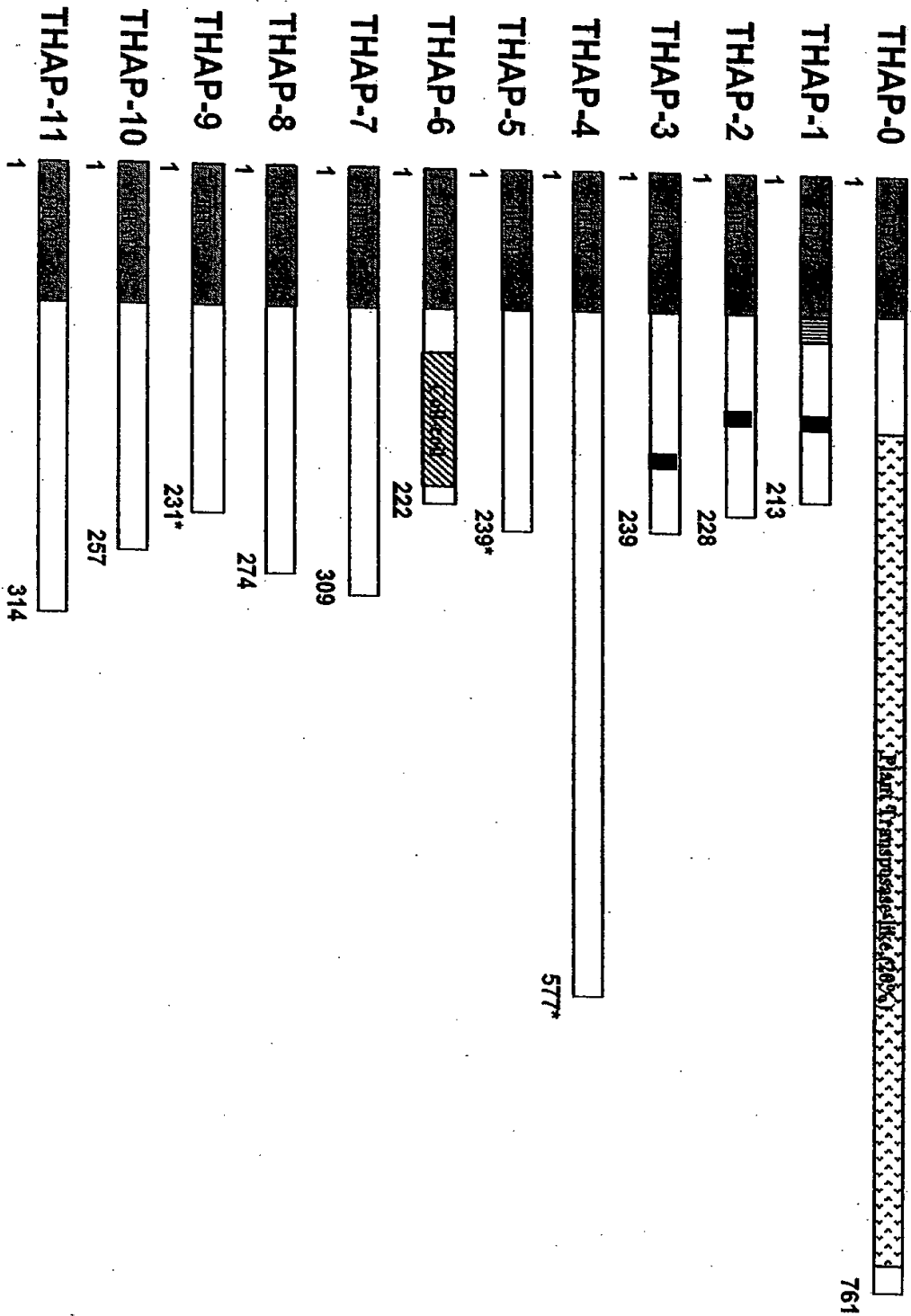
THAP PROTEINS AS NUCLEAR RECEPTORS FOR CHEMOKINES
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Figure 8



Girard et al.

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hTHAP1 47 F-----TKYSSGCEHNTPOEERECN-----NKLHKNVPTVETCTE PHDK
hTHAP3 48 F-----KHTVYCGEHTPEECGSAFEN-----NKLHKNVPTVETCTE PHDK
hTHAP5 50 F-----SKYQCGCEHTPTDPSLDING-----NKLHKNVPTVETCTE PHDK
hTHAP8 51 F-----SCHQVCGEHTPTSCQWRNG-----NKLHKNVPTVETCTE PHDK
hTHAP2 46 F-----TKYSLGCEHTPTKSGSKLED-----QHLHKLPTVETCTE PHDK
hTHAP4 49 F-----GKHTVCGEHTPEASQGLDNG-----TR-RKLMVPTVETCTE PHDK
hTHAP0 45 DKTPDQLNKHRTLCRKHETSMICRSP-----YKTVKQNVPTVETCTE PHDK
hTHAP7 56 PA-----SEYIKGCEHKEDEQELVIGS-----GKRLKQVPTVETCTE PHDK
hTHAP9 45 GG-----PEAL-ICGKHHTQESDPSGIR-----IKKPKQVPTVETCTE PHDK
hTHAP6 55 PK-----KQDV-ICGKHHTKPTDPSRAN-----IKKPKQVPTVETCTE PHDK
hTHAP11 54 F-----ITGHRGCSYHVGQ-----IKKRYTVKPTVETCTE PHDK
46 GG-----NDRSVICSIDPAAPQDVSIVI-----QNNLEFSQVETCTE PHDK
hTHAP10 38 G-----ENSLDIDHEHNSQKAPAGAGQFKEKRNLENDSEKATETEEPTK
Consensus 61 P ICS HT F KIK aPTHT

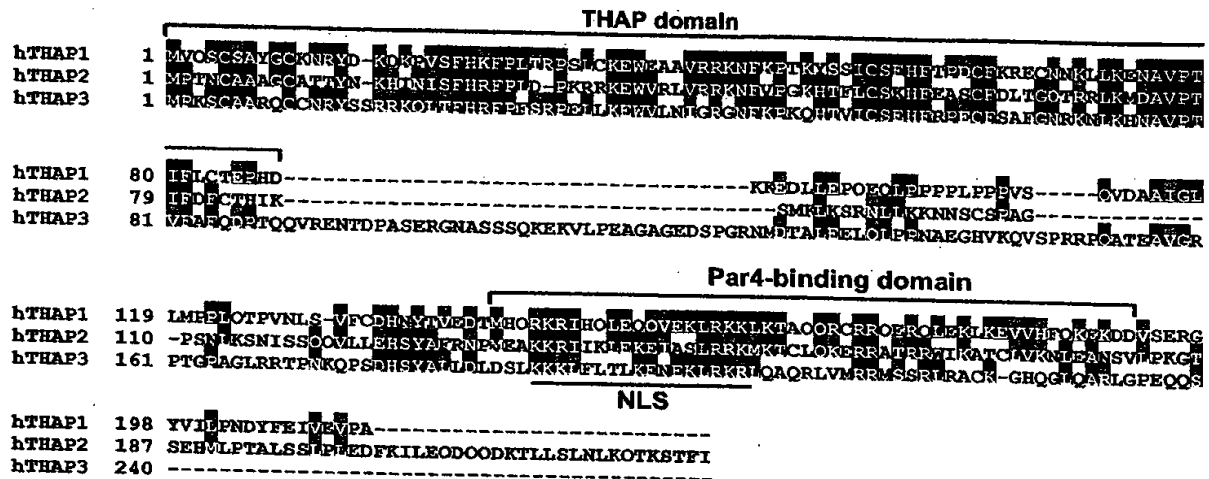
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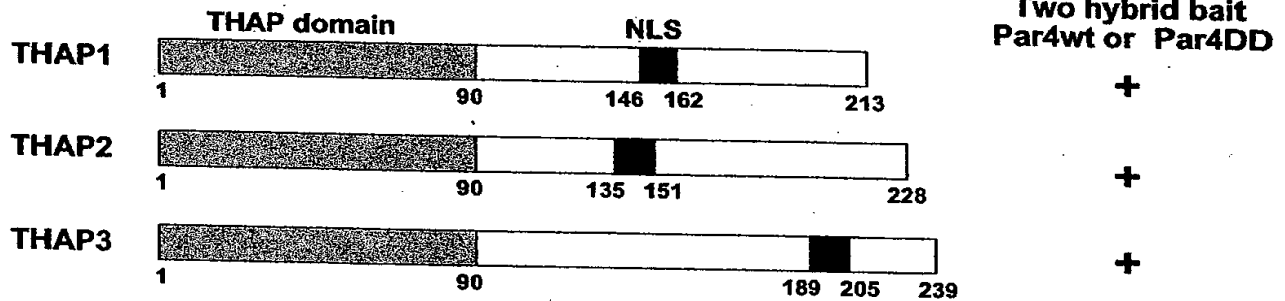
1 MEDGAAVCS---NRETK---LNDKGLTHERP---D-VKQOAM---TLAKR---DNREPKR---SLKCS-CHPEP-PORTQO---TVRFGVPTSLFNFNPLSKLS---93
 1 MP-VGSAAYCK---KRSDVETKEA-YKGEFSEHPEL---EDGLVREB---FRKARTON---WPTGN---SVLCS-HREKOC-EGVGS---BGRKCSAVPTIEFPEKGLQKV---97
 1 MIV-VSAAYCK---NTLR---NKSVESEHPEL---KQPSLLAK---KQWREKO---KQENK---SVLCS-HREKOC-ILEK---KTRHETWAPLTISFVFNNDSTQO---90
 1 MANSISLKYLRRECAYSKCVPEPK---ISSRN---SVLSSEHPEL---DR-ATKRAK---HNRHKT---VSEVP-H---VRKCS-HFNDP-PEPSYFT---AFSLKCAVPTIEFVFNNDSTQO---107
 1 ZAW421661---LRLQSAASHESLSTSLP---ODFGRNLR---ENARBDYKS---SINING---LRVCS-HFADD-ELNRS---KGRHASTAVKCEALPOLRRAG---89
 1 WITGACGCONRYKTLRLQDSKCHPKLPPKNGT---SDPELAK---LAKGLDINT---PLSVLET---RRLCS-DH-SFTD-FOVDPK---IVRLKSWAPV-ANLSEOFVDPK---105
 1 MEDGAAANCK---QSTDOSS---VSEFPEL---D-PRCSOQ---VGRCAFDLOT---KTFEDLHN---YKCS-HFETMIQOQAVK---CIKQDAPVTFVFNNDQAD---96
 1 NWKVTVOGCLN---FSDLPFQZONPKRKEPK---DKVLAVI---LAADPOTR---EITDLH---RLOEDHLSHITADG---ISPDHFMPLDQCPVGNW---91
 1 MELISSAVDCS---NRFV---KGSERHPEL---SKPOLAEQ---VSGERN---EVTQON---SOCS-HFODQOYNG---KLTFEDAPVTFISNS---84
 1 MFDGAPNCT---NFTOSD---JAEFRER---D-PERCSOQ---VNCRDAOLEA-KTADQLANH---YRLCAHFDPMVKTSFYR---TVKQATDPTDLSHLKNP---95
 1 MFDGAAHANR---NVVCK---FRGVLEHKEP---D-PEKLSR---TKMG---HSSVPKKY---DRVCS-HFSSSEHPORTQO---TVRLEDAWESLHLPWPKS---90
 1 ONRGAVLTGP---SEKTFD---QMGREH---D-ORSEPN---VKKCGEMLIG-KSFOLTRY---YRCKGHEHETSAFCCDADG---AVLKQAVPTIEASVPPQSSQ---94
 1 MEABGAVICS---HVVYHA---GSSISHERP---KKNOLLQ---KEFTQSAQ---WPESK-W---SALCS-HFCDENCSNN---PQLEKNAVPSIRVSEDDMSCH---92
 1 MPTIRGCIIGCL---SNRQH---PSGOFAR---PENTPEL---KQACHASLR---IVFTRK---FVGLHFDPSVLG---SROCSALPTIEFVPSNLEA---90
 1 JR-GAVNEN---FSDCRKNAQOQRLCFERFK---CPDTIRAK---LAPGYTES---LKLKN---PCLTIEHEDDIEGSLKTFMG---LAKGRTSPCAVKSOCESDORA---104
 1 MGTCACCTQEP---VGSRN---PKVGRNEN---KQPKRLQD---VNCNSPOVSN---APESKLA---KQVGRHARSC-AYQW---DRALQATLIERINELADLY---96
 1 MATRCAVNDSEY---YVGHEN-ALHGGTALFAK---OPORULI---ENGQVHP---KIPHSQ---LFPASHDRKQTSISNN---KTRLJGSAVETFEPPKSGPEE---96
 1 MK-YGF-CK---AVTGKLEVEK---CALVRLI---ESQSCS---LGENS---QLOTHDSQMAAPMG---QTFKRAHMDANVSKATIEPEKPKKE---87
 1 MEASVTPED---LKYTHG---DQSHKEBL---KSEPLLQ---HFTQDEG---HPTK-W---SALCS-HFVSDGSCAA---PQULPTVASTONAAKAGQEN---92
 1 MSVAVRGL---CON---RSNITDQDADALERTYKNET---NEVQRON---LEFCOLPE---SFTKSAY---KFCSSHETFECDRAGCELL-YGTQMTDQAMETTSVYSQARNT---108
 1 NM-DGAVIGEN---SRNAOK---TRPRISHVIEHPVRESNEN---AALNPRFLDPLAVKGS---VAVGRHECPDQNGVKR---MLPLATPTIEFVPRVALV---100
 1 MGLKCLVPEP---SSARP---EORGWYKIB---LDMEKIL---VACHLPD---PATKA---SNVCS-HFRRADDEPKG---KVMKLGVPVTFVPTVTPGEE---95
 1 MGKISGICVLGR---NGLLN---QANTISGREP---DADGLQW---VFCNRPETYKNDGENSELYKS---SRICS-HFOPADFNPLS---QGLKGSVSNKGRALPAARH---107
 1 MNCSGAVADN---NENVRN---KRWLDCEHEDS---D-PVQRON---WVCGRSPS---EOPKSC---DSGSHEDQDTHSNHSPILKL-ATNLRLPDMPTIEKGRALPVAAR---104
 1 MGCGCTFRDS---NGTAR---KEMPRNIV---ROEELIN---AKNADLEFDV---LFDKVEN---KVCSHFERASNDLR---KVCSHFERASNDLR---DQATKALHFMVMDPTIVN---95
 1 MK-OFVSGD---TDSNVS---YTSFVNCIT---DPTQOQ---FTLEFVTDPMARALVDGGS---KVCSCHIEDCEHPVVG---YRMLATLPTVPEKKEIEQK---97
 1 ME-RESVYCK---MNSDYN---YKQDSSEHPEK---D-PCKEAW---FNATQKES---EPTTN---HNLCSHFKCOPLAKK---VGRSEVSPKCLKRWLYN---92
 1 MEDTHRECV-GEI---KEHLTEK---RFEAREL---DVGKQON---MAGSGLDAILAQVEMHEDL---KNGOLSHSRDPEPKK---RUKKAWQONKLTPLPRDEI---96
 1 MPTICGFPNK---FESVRG---LEDNRHPELIK---RPLIRORN---PAIGAREET---VVSOLR---IGCSHGEZKEK---GDPVTDVTKQIKELPEK---89
 1 MYGVGSCVL-SA---HAND---CTAMPEGP---DDEKLRTN---KUSGEFTYV---RLSTLEKQGREVLCGSHSNLSYHAGLG---LRRPAAKCEMACTDERGV---100
 1 MEHPLQGL-GL---EVEYER---YMTQVCK---TEQELAN---VAJGEORF---IRUKRGA---NYVRGHPDQDSRGR---PLKAVENVSVCKYAPK---86
 1 NLTHQCTV-ON---RWKKS---GEMILNDA---DLDRSLN---ANILGFKYKQILKSNMGVPVPSIAAGFCLCHEASECENHFN---KSALEAGVPRVALSPDVNTI---97
 1 mp C C C F vstfakp r k w v v r f iCs HF f - k lk avPti f
 1 consensus

Figure 10

A



B



C

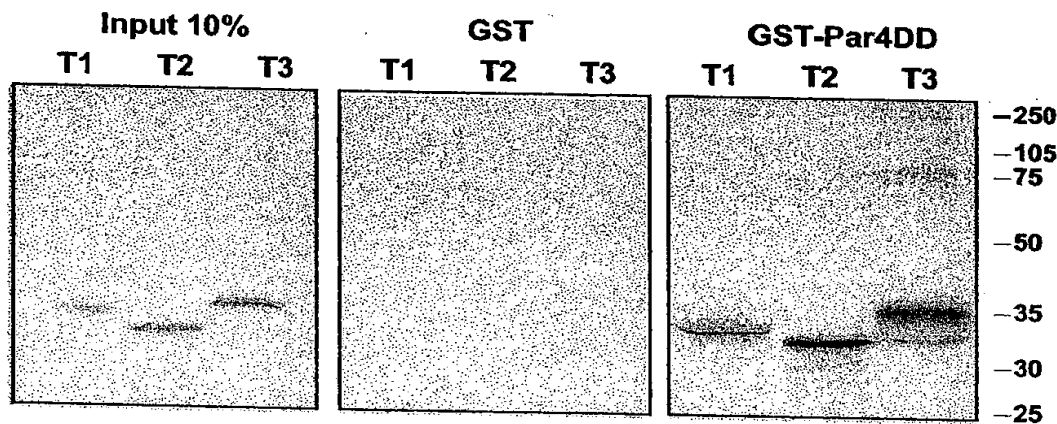
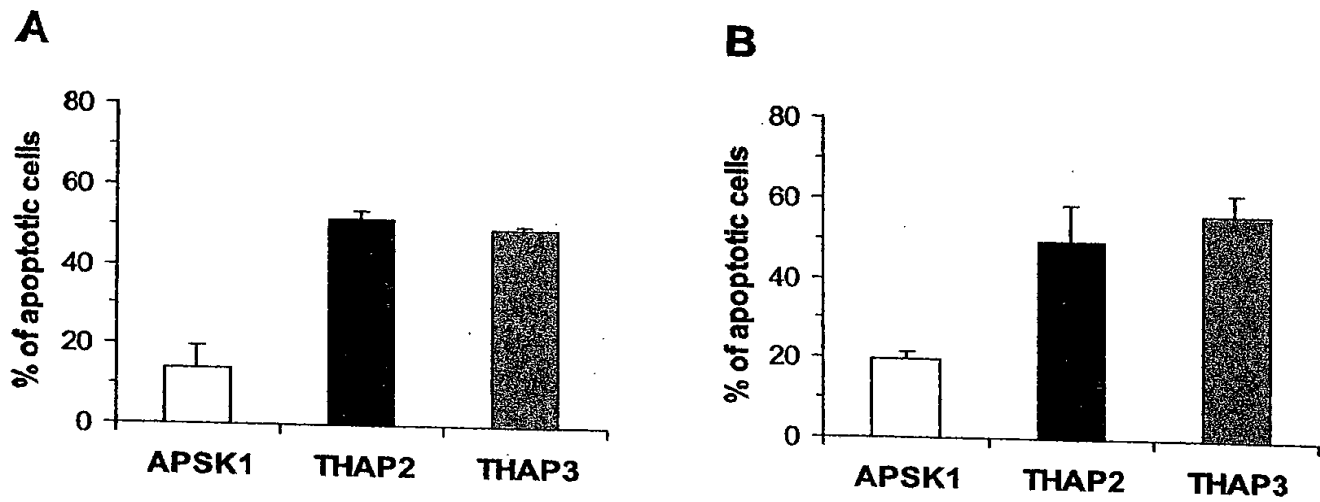


Figure 11



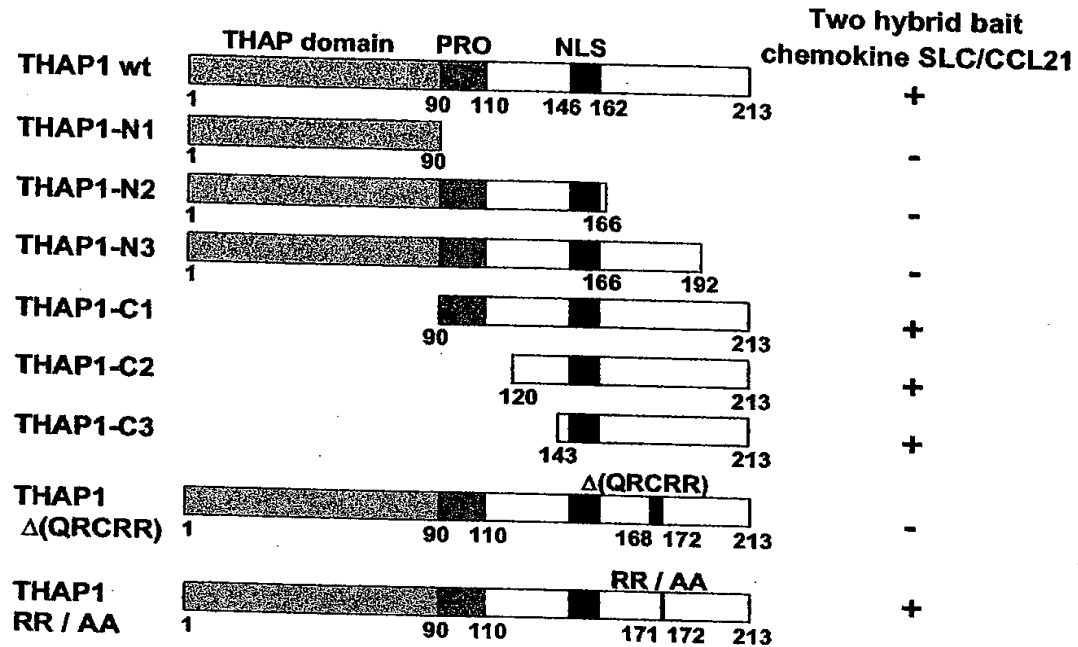
THAP PROTEINS AS NUCLEAR RECEPTORS FOR CHEMOKINES
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Figure 12



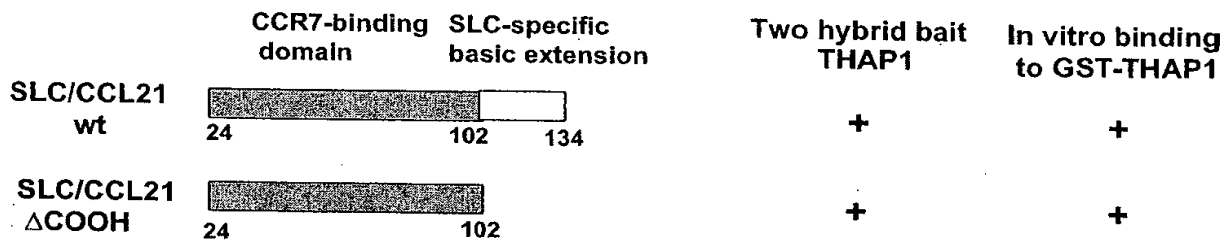
**THAP PROTEINS AS NUCLEAR RECEPTORS FOR CHEMOKINES
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Girard et al.

Appl. No.: Unknown

Atty Docket: BIOBANK.012A

Figure 13



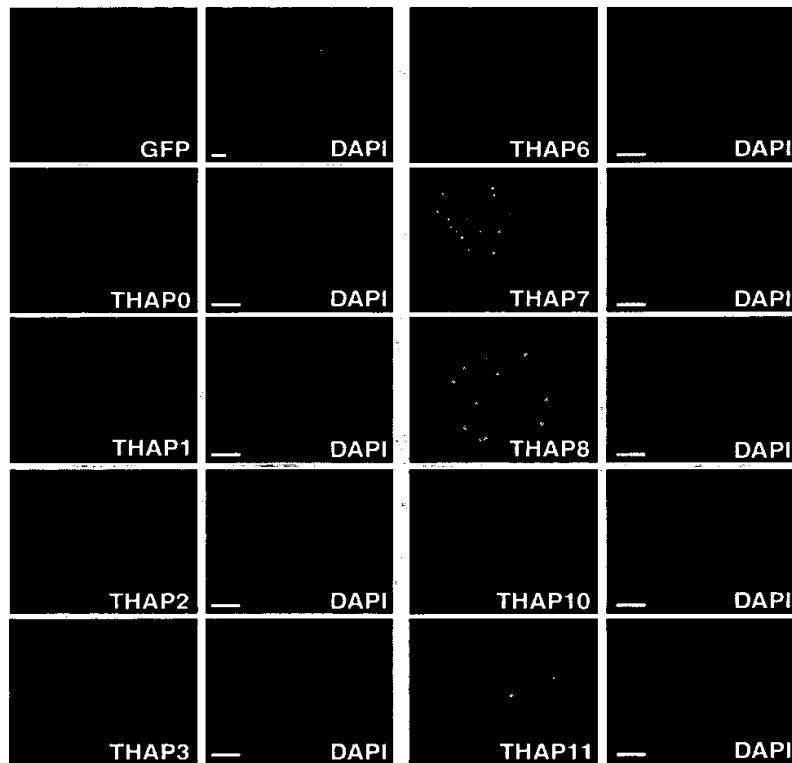
THAP PROTEINS AS NUCLEAR RECEPTORS FOR CHEMOKINES
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FIGURE 14



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[illegible]

THAP PROTEINS AS NUCLEAR RECEPTORS FOR CHEMOKINES
AND ROLES IN TRANSCRIPTIONAL REGULATION, CELL
PROLIFERATION AND CELL DIFFERENTIATION

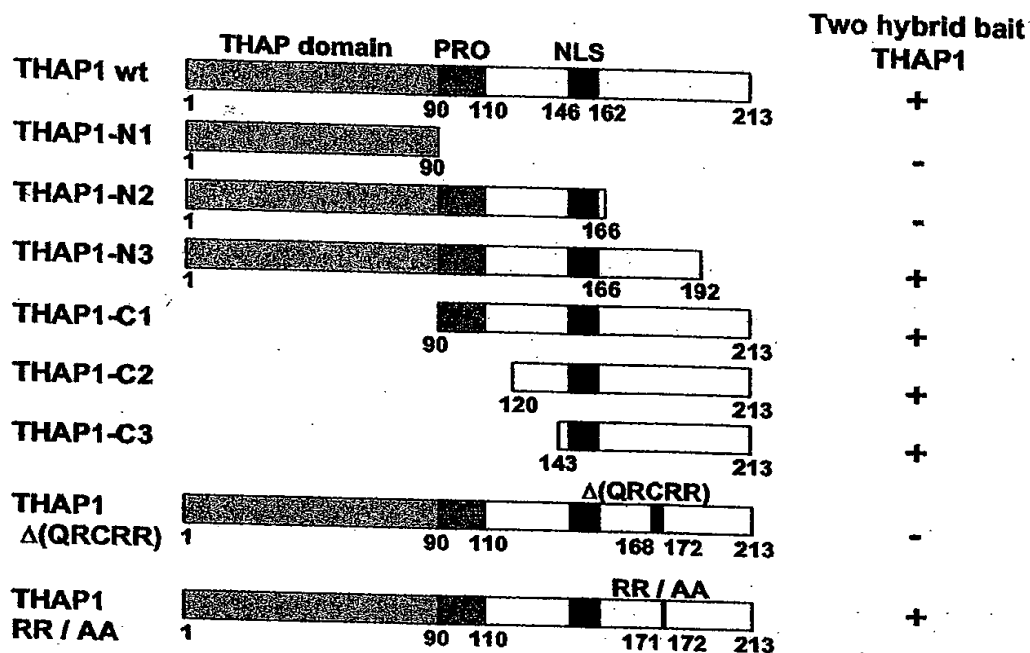
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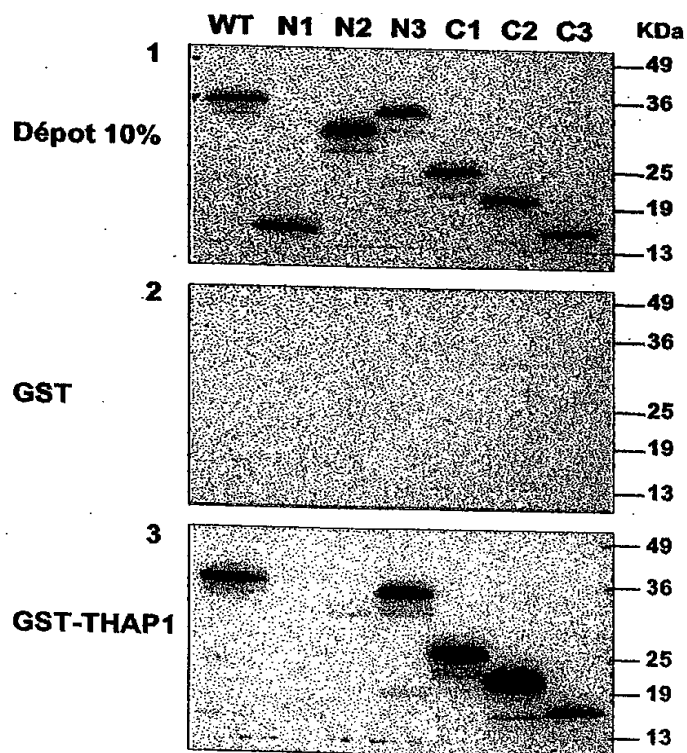
Atty Docket: BIOBANK.012A

FIGURE 16

A



B



THAP PROTEINS AS NUCLEAR RECEPTORS FOR CHEMOKINES
AND ROLES IN TRANSCRIPTIONAL REGULATION, CELL
PROLIFERATION AND CELL DIFFERENTIATION

Girard et al.

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Fig.
17A

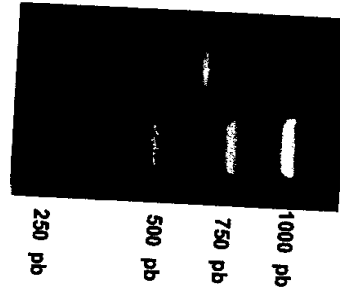
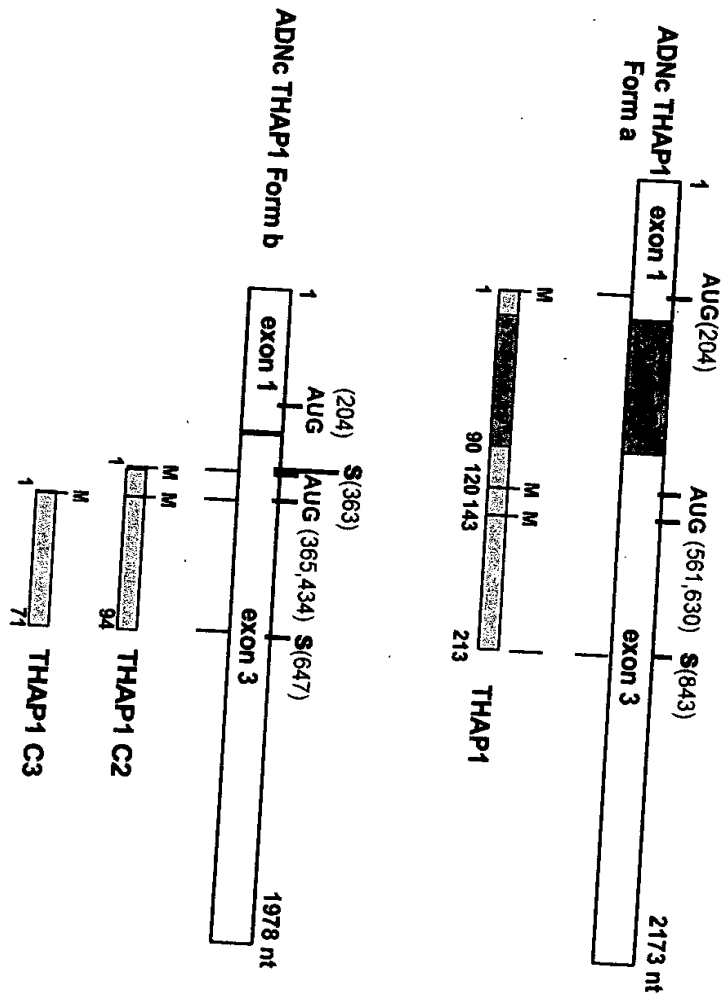


Fig.
17B



THAP PROTEINS AS NUCLEAR RECEPTORS FOR CHEMOKINES
AND ROLES IN TRANSCRIPTIONAL REGULATION, CELL
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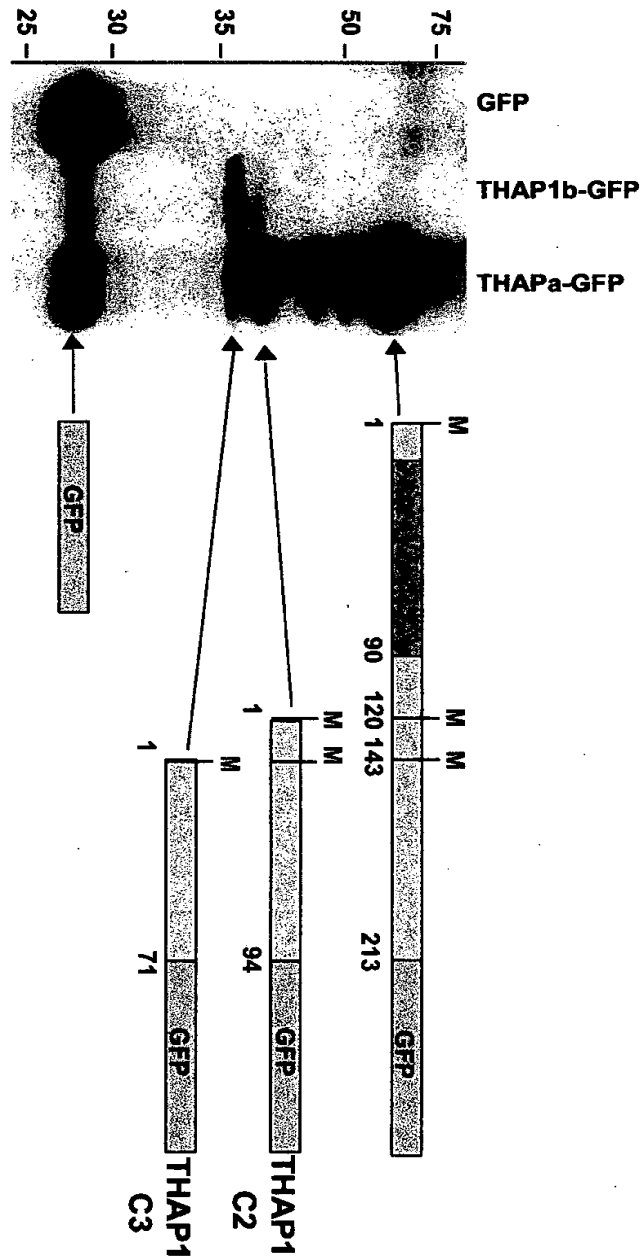


FIG. 17

THAP PROTEINS AS NUCLEAR RECEPTORS FOR CHEMOKINES
AND ROLES IN TRANSCRIPTIONAL REGULATION, CELL
PROLIFERATION AND CELL DIFFERENTIATION

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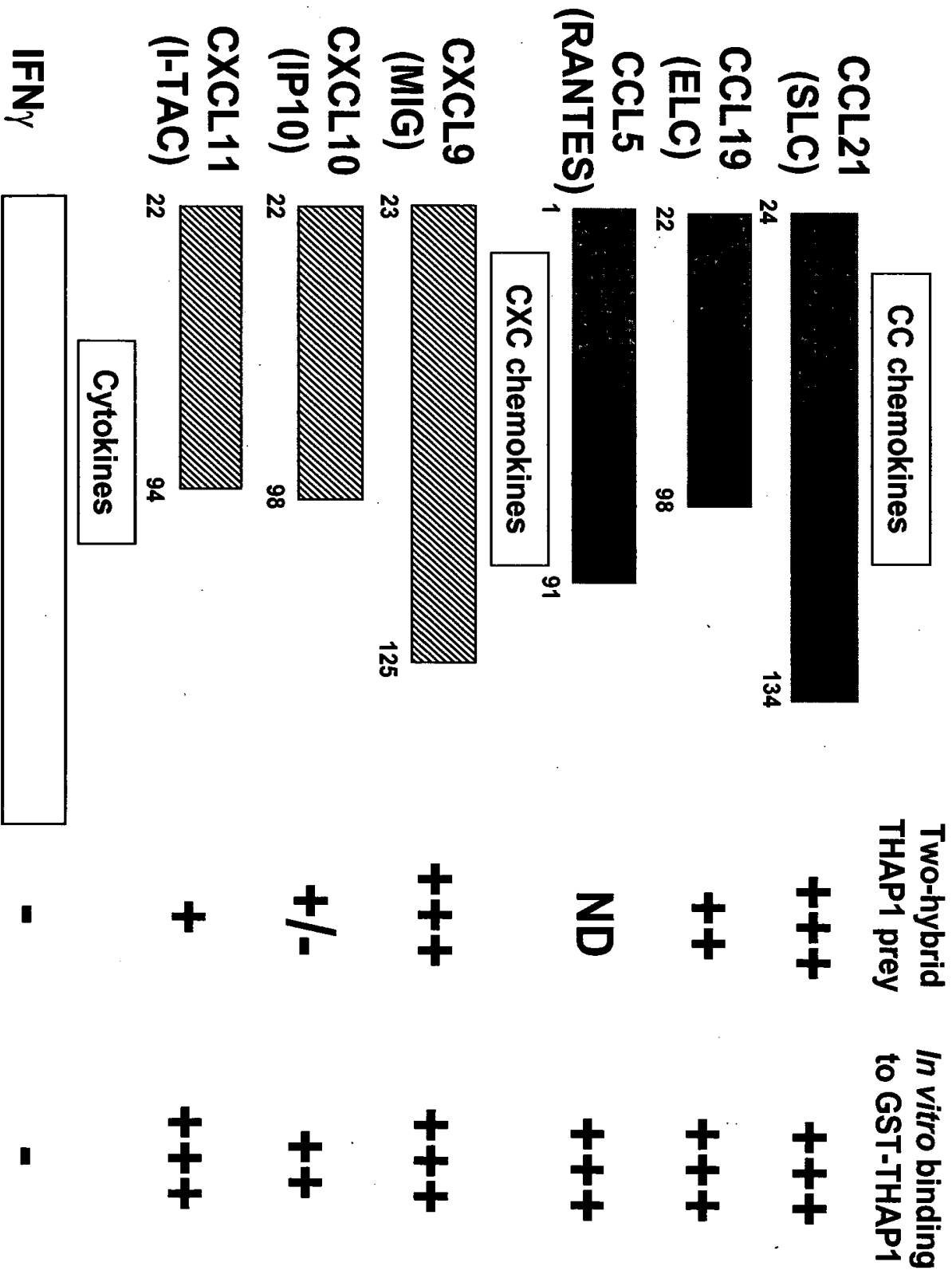
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Figure 18

A	GGGCAT	ACTAC	TGGCAA
	GGGCAA	ACTGT	GGGCAT
	GGGCAT	ACTAC	TGGCAA
	GGGCAA	ACTAC	TGGCAA
	GGGCCA	GTTTG	TTGCAA
	GGGCAT	GTAC	TGGCAA
	GGGCAA	CTGT	GGGCAA
	GGGCAA	CACTAC	TGGCAA
	GGGCAA	AGTAC	TGGCAA
B	TTGCCA	GTACTAGTGT	GGGCAA
	CTGCCA	GTACATAGTGT	GGGCAA
	TTGCCA	GTACTAGTGT	GGGCAA
	CTGCCA	GTAGATACTGT	GGGCAA
	TTGCCA	GTAGTTAGGTGT	GGGCAA
	TTGCCA	GTAGTTAGTGT	GGGCAA
	TTGCCA	GTACCTACTAA	GGGCAA
	TTGCCA	GTAGTTAGTGT	GGGCAG
	CTGCCA	GTAGTAAGTGT	GGGCAG

1) DR-5 Consensus Motif
GGGCAAnnnnnnTGGCAA
(DR-4, DR-6)

2) ER-11 Consensus Motif
TTGCCAnnnnnnnnnnGGGCAA
(ER-12)



21

FIGURE 19

166

THAP PROTEINS AS NUCLEAR RECEPTORS FOR CHEMOKINES
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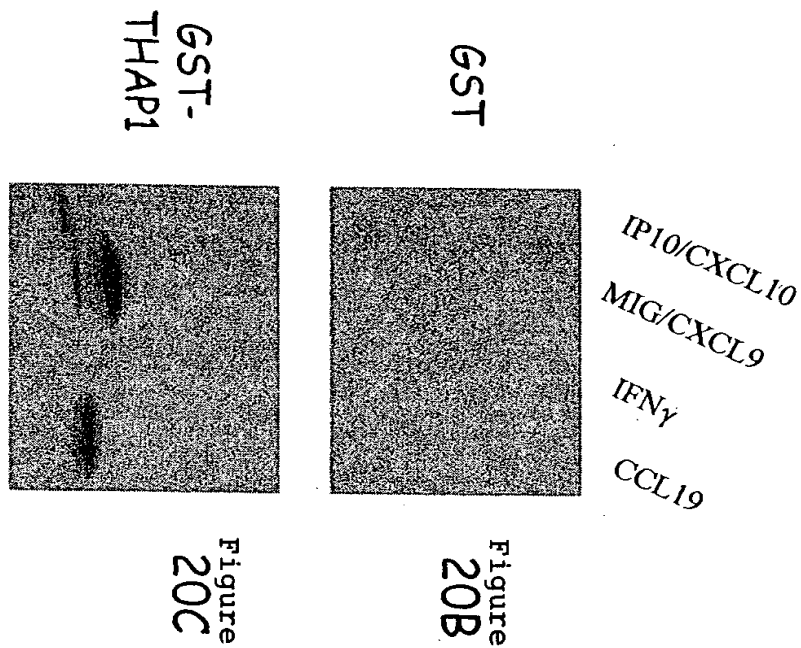
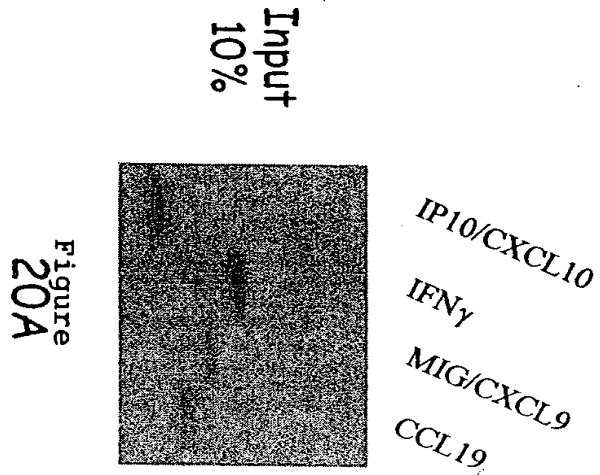


Fig. 21A

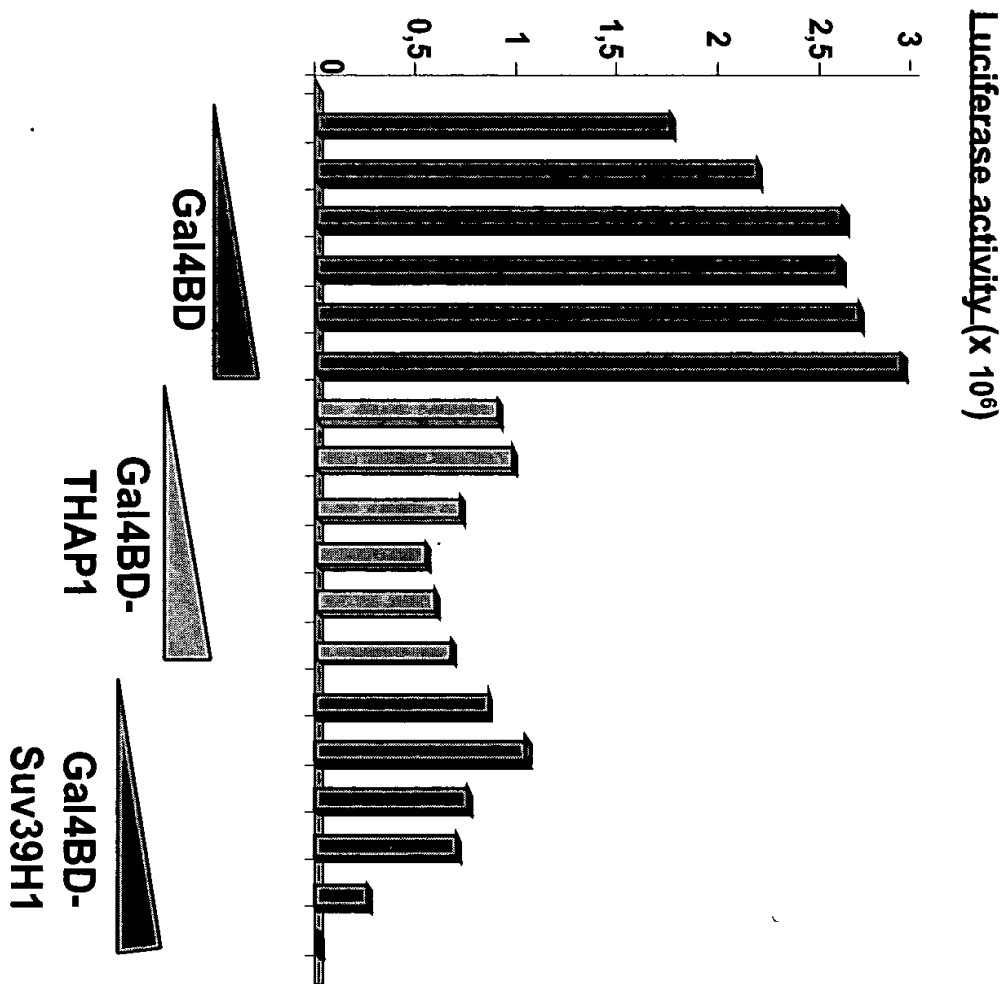
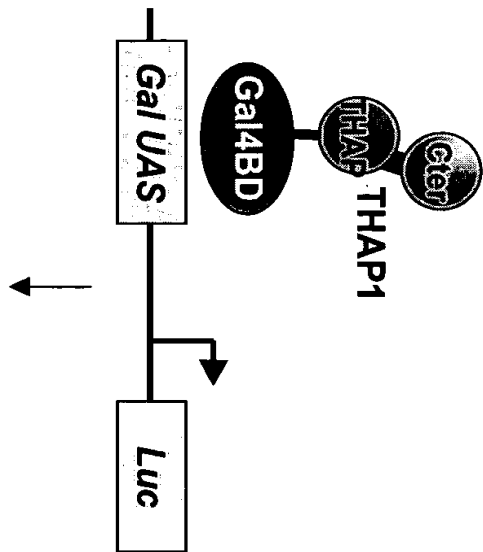


Fig. 21B

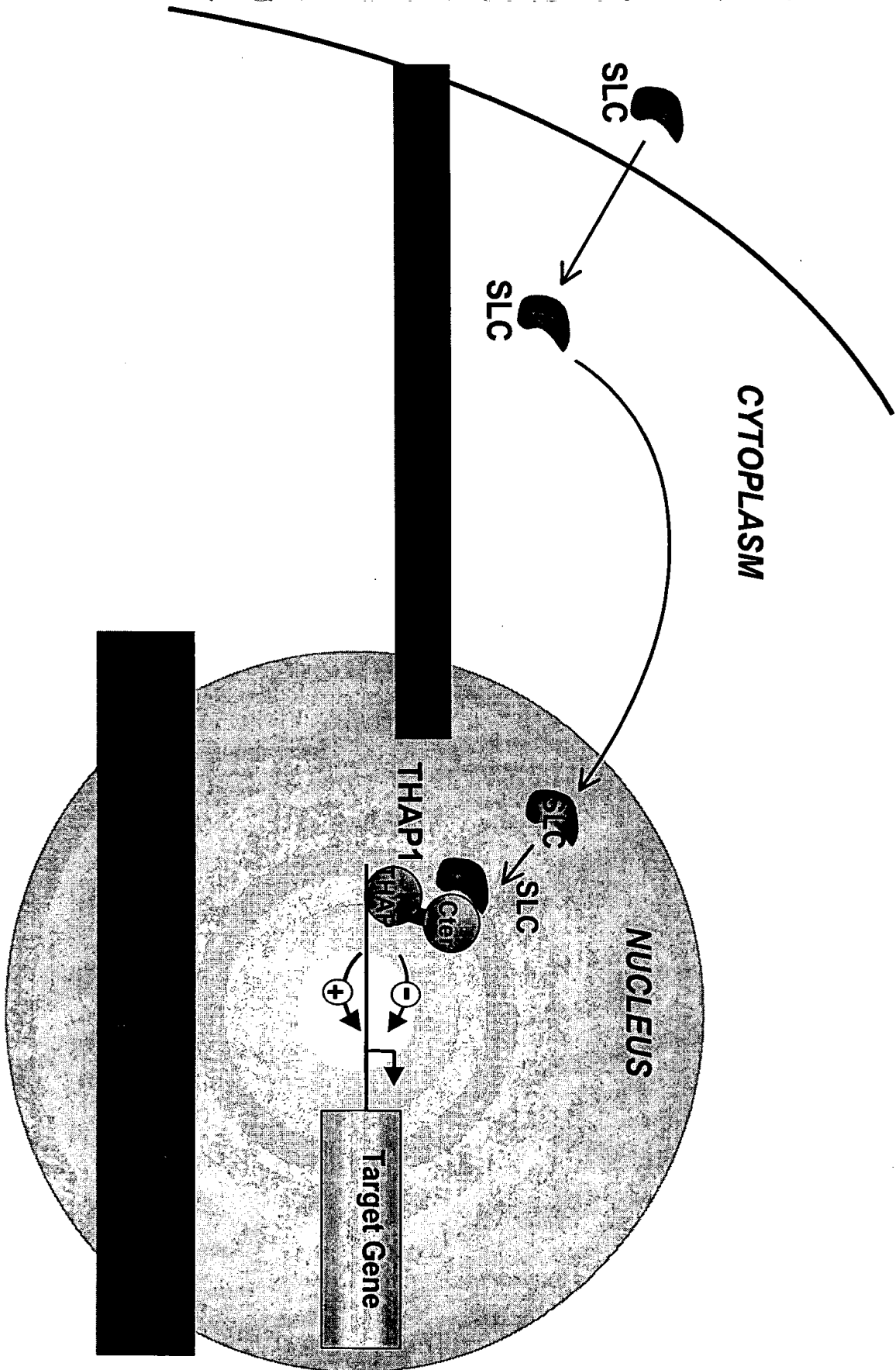


Figure 22A

Figure 22B

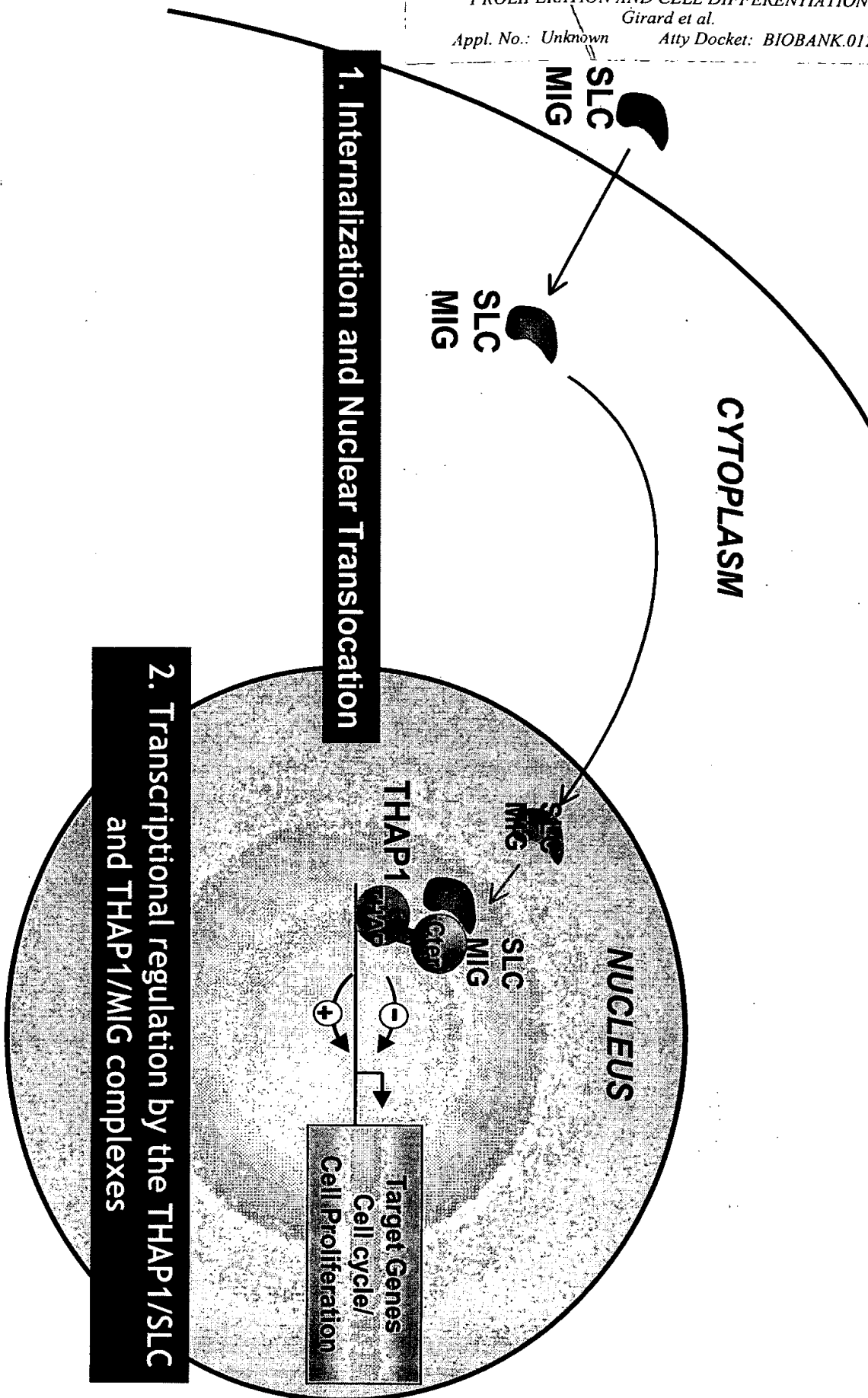


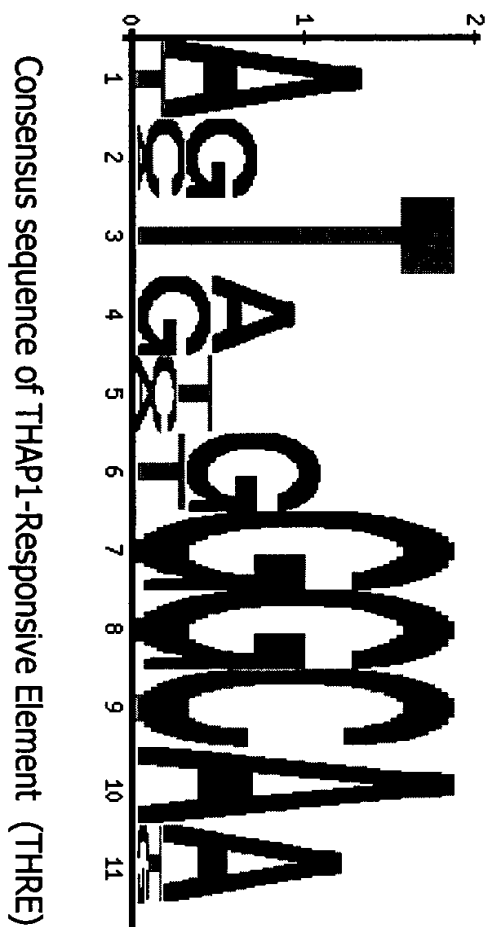
Figure 23

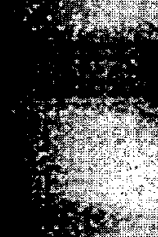
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721 atctctgggc ctctctggag accaagtggg tgggctgtgg gggcgtcata ttggccctggc
781 ttggcatccc tcttgtggt gtaacctcc cagcagcccc aggaactagca agtccccgag
841 atgggggtgg ggacagtgt tgatgccaaa ggttgtggg gcaggggcgg ggcaggagca
901 ggaaggcccc ctgagtcgcc tcacctggg cagagataaa aggagcacacg ttccaggcgg
961 ggctgagcta gggcgtagct gtgatttcag gggcacctct ggcggtgccc gtgattgag
1021 aatctcggt ctcttgctg actgacctg ggagactgtg gatgataat gctgtgagt

The human *Fucosyltransferase TVII* promoter

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Figure 24





AGTAAGGGCAA
AGTAATTCAA
AGTAAGGTCAA
AGTAAGTCAA
AAGTAAGGGCC
AAGTAAGGGAA

Figure 25B

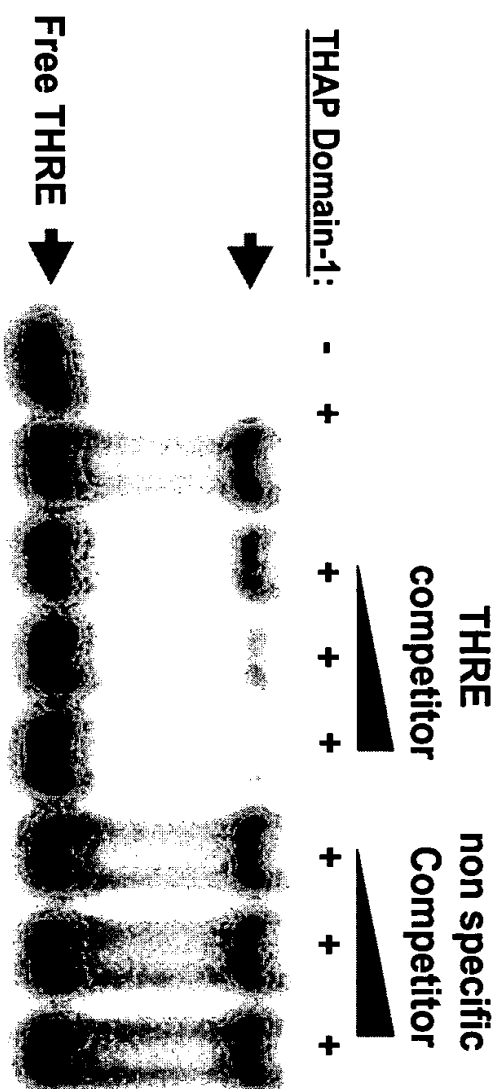


Figure 26A

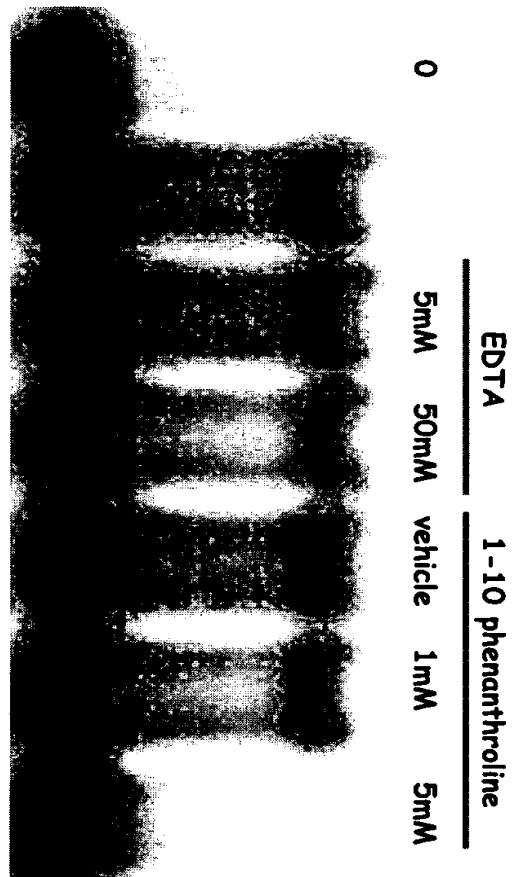


Figure 26B

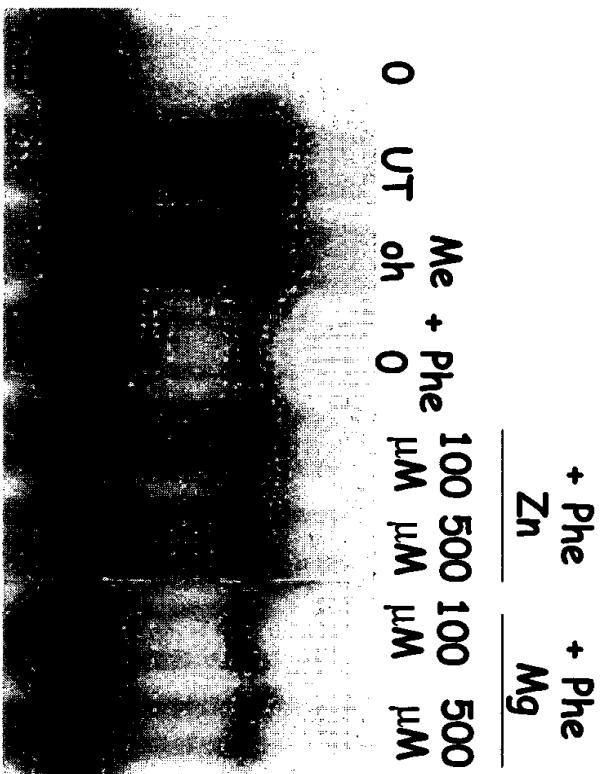


Figure 27

GFP-SLC

Fig. 27A

HeLa

Fig. 27B

GFP-MIG

HeLa

Fig. 27C

Fig. 27D

Figure 28

phMIG-Flag
pEF-puro

Fig. 28A

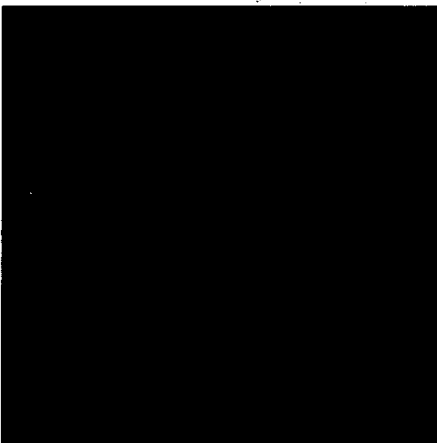
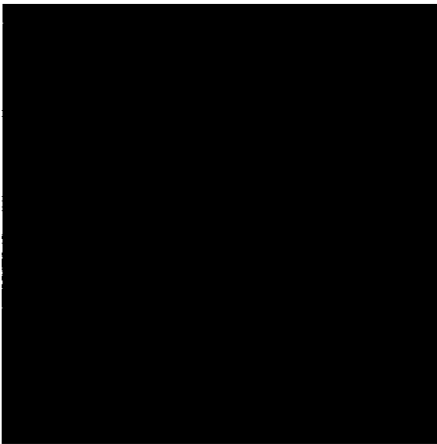


Fig. 28B

phMIG-Flag
pEF-CXCR3a

Fig. 28C

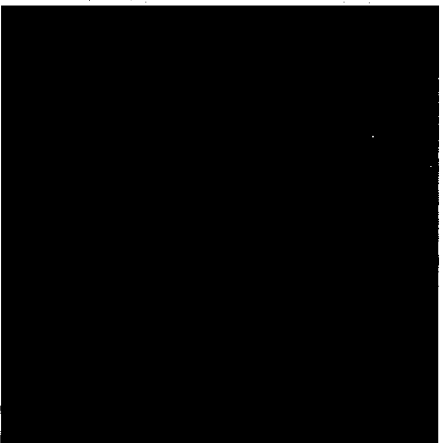
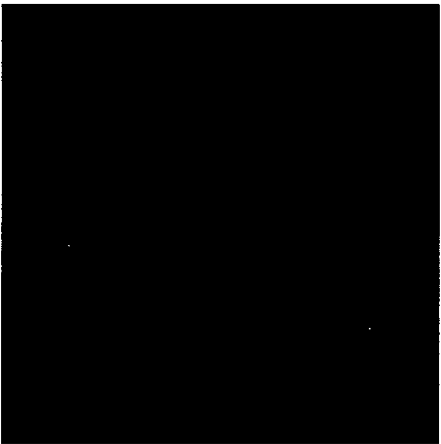


Fig. 28D

Anti-Flag Cy3

DAPI

THAP PROTEINS AS NUCLEAR RECEPTORS FOR CHEMOKINES
AND ROLES IN TRANSCRIPTIONAL REGULATION, CELL
PROLIFERATION AND CELL DIFFERENTIATION

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Appl. No.: Unknown

Atty Docket: BIOBANK.012A

Anti-Flag Cy3

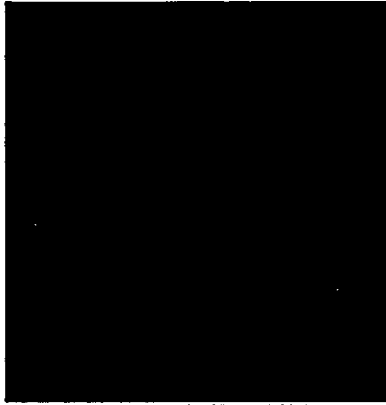


Fig. 29A

Anti-CXCR3 Cy2

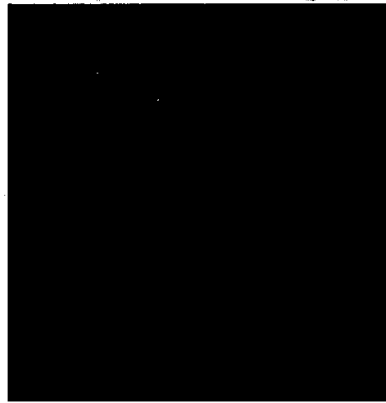


Fig. 29B

DAPI

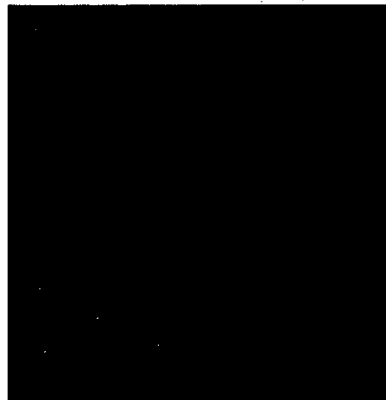


Fig. 29C

U2OS: phMIG-flag + pEF-CXCR3a

Figure 30

The human *Survivin* promoter

Hs Survivin/BIRC5 promoter fragment (GenBank NT 010641.14|Hs17 10798 Homo sapiens chromosome 17 genomic contig; nucleotides 10102350-10102668)

```
1  cgtcgttgg  tgcaccgcga  ccacgggcag  agccacgcgg  cgggaggact  acaactcccg
61  gcacaccccg  cgcgcgcccg  ccttactcc  cagaaggccg  cgggggttg  accgcctaag
121  agggcgtgcg  ctccgcacat  gccccgcggc  gcgccattaa  ccgccagatt  tgaatcgcgg
181  gacccgttg  cagaggtggc  ggcggcggca  tggtgcccc  gacgttgccc  cctgcctggc
241  agcccttct  caaggaccac  cgcattctta  cattcaagaa  ctggcccttc  ttggagggct
301  gcgcctgcac  cccgagagcg
```

Figure 31

The human *Ubiquitin specific protease 16* promoter

Hs USP16 promoter ; range -499 to 100 >EP73421 (EPD database at <http://www.epd.isb-sib.ch/>)

```
TGGTCCCGTGGCCCTGTAGTCCCAGCTACTCGGGAGGCTGAGGCGAGAAGATGCACTCCAGCCTGGCGACAGAGGATATT  
CCGTCCTCAACCAACAAAAATCACTCGCTGCGTTTTTATTCTGACATGGTGCAGGAAGTTAAATTCAAGACAACCTTAGGTAC  
TCAGTTTGAAGTCGACAGGACAGAAATTACGGAACAAATTTAAGCGTTCCCCCTTTTAGCTCCAAATATAATGTGTTCCAGAA  
AGGTAACCATCTAGGAACTCCAAGGCTCAGACCACCAACCGGATGCCACACTTCAGGAGCATTTATAIACTTCGTGGTTAT  
GTCAGAGACGAGAAAAACCCATTGACAACCAAAACCCCTAAACCCGAACATCCGGCGCAAGCCGACGCGAGGCGAGATTTACTA  
GCGTCAGAGCCGATGTTCCCGGGAGGTGGGGTGGGGTGGTGGCTAGCCACTTCCCATTAATGCCGCGTCCGGAAGT  
TATTGCTTCCAGGGGTCACCTCTGGCTTGCACCTCCGTCGCTCTCAATTCGTCACCAGGAGGAAGACGGAGCTGGCTGCCACG  
CCAAAGGCCCATGAGGGGA
```